

We claim:

- 1 1. A graphics system command stream comprising:
 - 2 a stream command 0x614F followed by a pad, an alpha value and a red
 - 3 value;
 - 4 a stream command 0x6150 followed by a pad, a green value and a blue
 - 5 value; and
 - 6 a stream command 0x6151 followed by a 24-bit z value.
- 1 2. A storage medium storing a data structure comprising:
 - 2 a stream command 0x614F followed by a pad, an alpha value and a red
 - 3 value;
 - 4 a stream command 0x6150 followed by a pad, a green value and a blue
 - 5 value; and
 - 6 a stream command 0x6151 followed by a 24-bit z value.
- 1 3. A graphics command stream decoder comprising:
 - 2 a first decoding section decoding a stream command 0x614F followed by a
 - 3 pad, an alpha value and a red value;
 - 4 a second decoding section decoding a stream command 0x6150 followed by
 - 5 a pad, a green value and a blue value; and
 - 6 a third decoding section decoding a stream command 0x6151 followed by a
 - 7 24-bit z value.
- 1 4. A method of generating a graphics command stream comprising:
 - 2 generating a stream command 0x614F followed by a pad, an alpha value
 - 3 and a red value;

4 generating a stream command 0x6150 followed by a pad, a green value and
5 a blue value; and

6 generating a stream command 0x6151 followed by a 24-bit z value.

1 5. A graphics command stream comprising:

2 an array base load register command comprising 0x08Ax, where the second-
3 mentioned "x" after "A" encodes an attribute indicator,

4 a 32-bit value including a 26-bit address,

5 a stream command 0x08Bx, where the second-mentioned "x" after "B"
6 encodes an attribute indicator, and

7 a succeeding 32-bit value including eight bits indicating a stride for an
8 array.

1 6. A storage medium storing a data structure comprising:

2 an array base load register command comprising 0x08Ax, where the second-
3 mentioned "x" after "A" encodes an attribute indicator, and

4 a 32-bit value including a 26-bit address,

5 a stream command 0x08Bx, where the second-mentioned "x" after "B"
6 encodes an attribute indicator, and

7 a succeeding 32-bit value including eight bits indicating a stride for an
8 array.

1 7. A graphics command stream decoder comprising:

2 a first decoding section decoding an array base load register command
3 comprising 0x08Ax, where the second-mentioned x encodes an attribute indicator,
4 and

5 a second decoding section decoding a 32-bit value including a 26-bit
6 address,

7 a third decoding section decoding a stream command 0x08Bx, where the
8 second-mentioned x encodes an attribute indicator, and

9 a fourth decoding section decoding a succeeding 32-bit value including
10 eight bits indicating a stride for an array.

1 8. A method of generating a graphics command stream comprising:

2 generating an array base load register command comprising 0x08Ax, where
3 the second-mentioned x encodes an attribute indicator, and

4 generating a 32-bit value including a 26-bit address,

5 generating a stream command 0x08Bx, where the second-mentioned x
6 encodes an attribute indicator, and

7 generating a succeeding 32-bit value including eight bits indicating a stride
8 for an array.

1 9. A graphics command stream comprising:

2 a stream command 0x0850 followed by a 32-bit value including seventeen
3 bits defining attribute indexing information for up to twelve attributes, and

4 a further stream command 0x0860 followed by a 32-bit value including
5 sixteen bits encoding attribute indexing information for up to an additional eight
6 attributes.

1 10. A storage medium storing a data structure comprising:

2 a stream command 0x0850 followed by a 32-bit value including seventeen
3 bits defining attribute indexing information for up to twelve attributes, and

4 a further stream command 0x0860 followed by a 32-bit value including
5 sixteen bits encoding attribute indexing information for up to an additional eight
6 attributes.

1 11. A graphics command stream decoder comprising:

2 a first decoding section decoding a stream command 0x0850 followed by a
3 32-bit value including seventeen bits defining attribute indexing information for
4 up to twelve attributes, and

5 a second decoding section decoding a further stream command 0x0860
6 followed by a 32-bit value including sixteen bits encoding attribute indexing
7 information for up to an additional eight attributes.

1 12. A method of generating a graphics command stream comprising:

2 generating a stream command 0x0850 followed by a 32-bit value including
3 seventeen bits defining attribute indexing information for up to twelve attributes,
4 and

5 generating a further stream command 0x0860 followed by a 32-bit value
6 including sixteen bits encoding attribute indexing information for up to an
7 additional eight attributes.

1 13. A graphics command stream comprising:

2 a graphics command 0x0870 followed by a 4-byte value including attribute
3 information for position, normal, a first color, a second color, a texture 0
4 coordinate, and further including a byte dequantization flag and a normal index
5 flag, and

6 at least one additional stream command defining at least one texture
7 coordinate attribute.

1 14. A storage medium storing a data structure comprising:

2 a graphics command 0x0870 followed by a 4-byte value including attribute
3 information for position, normal, a first color, a second color, a texture 0
4 coordinate, and further including a byte dequantization flag and a normal index
5 flag, and

6 at least one additional stream command defining at least one texture
7 coordinate attribute.

1 15. A graphics command stream decoder comprising:

2 a first decoding section decoding a graphics command 0x0870 followed by
3 a 4-byte value including attribute information for position, normal, a first color, a
4 second color, a texture 0 coordinate, and further including a byte dequantization
5 flag and a normal index flag, and

6 at least one additional decoding section decoding at least one additional
7 stream command defining at least one texture coordinate attribute.

1 16. A method of generating a graphics command stream comprising:

2 generating a graphics command 0x0870 followed by a 4-byte value
3 including attribute information for position, normal, a first color, a second color, a
4 texture 0 coordinate, and further including a byte dequantization flag and a normal
5 index flag, and

6 generating at least one additional stream command defining at least one
7 texture coordinate attribute.

1 17. A graphics command stream comprising:

2 a bit pattern "00010000", followed by

a pad, followed by

a 21-bit value including sixteen bits of address indicating a transform unit register location and an additional five bits indicating how many words will follow, followed by

at least one additional 32-bit word providing a projection matrix element value.

18. A storage medium storing a data structure comprising:

a bit pattern "00010000", followed by

a pad, followed by

a 21-bit value including sixteen bits of address indicating a transform unit register location and an additional five bits indicating how many words will follow, followed by

at least one additional 32-bit word providing a projection matrix element value.

19. A graphics command stream decoder comprising:

a first decoding section decoding a bit pattern "00010000", followed by

a second decoding section decoding a pad, followed by

a third decoding section decoding a 21-bit value including sixteen bits of address indicating a transform unit register location and an additional five bits indicating how many words will follow, followed by

at least one additional decoding section decoding at least one additional 32-bit word providing a projection matrix element value.

1 20. A method of generating a graphics command stream comprising:

2 generating a bit pattern "00010000", then

3 generating a pad, then

4 generating a 21-bit value including sixteen bits of address indicating a
5 transform unit register location and an additional five bits indicating how many
6 words will follow, then

7 generating at least one additional 32-bit word providing a projection matrix
8 element value.

1 21. A graphics command stream comprising:

2 a bit pattern "01000000", followed by

3 a pad, followed by

4 a 25-bit value indicating the address of a display list in memory, followed
5 by

6 a pad, followed by

7 a 25-bit value indicating the size of the display list in 32-byte chunks.

1 22. A storage medium storing a data structure comprising:

2 a bit pattern "01000000", followed by

3 a bit pattern "00000000", followed by

4 a 25-bit value indicating the address of a display list in memory, followed
5 by

6 a bit pattern "00000000", followed by

7 a 25-bit value indicating the size of the display list in 32-byte chunks.

1 23. A graphics command stream decoder comprising:

2 a first decoding section decoding a bit pattern “01000000”,

3 a second decoding section decoding a bit pattern “00000000”,

4 a third decoding section decoding a 25-bit value indicating the address of a
5 display list in memory,

6 a fourth decoding section decoding a bit pattern “00000000”,

7 a further decoding section decoding a 25-bit value indicating the size of the
8 display list in 32-byte chunks.

1 24. A method of generating a graphics command stream comprising:

2 generating a bit pattern “01000000”, then

3 generating a bit pattern “00000000”, then

4 generating a 25-bit value indicating the address of a display list in memory,
5 then

6 generating a bit pattern “00000000”, then

7 generating a 25-bit value indicating the size of the display list in 32-byte
8 chunks.